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(54) FUEL CELL TEMPERATURE CONTROL DEVICE, AND FUEL CELL STARTING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To shorten the time used for raising the temperature of the whole part of electricity generating surface of a fuel cell up to the operation temperature.

SOLUTION: An external heating operation, heating a coolant by a heating device 14, is kept in a state of off, until the temperature of the coolant, exhausted after flowing through a coolant flow path 21 of a fuel cell 11, reaches a prescribed first temperature T1 (for example, 0° C). The temperature at a coolant supply inlet Tin and the temperature at a coolant exhaust outlet Tout are made to gradually increase by making the relative temperature of Tin to Tout alternately invert, and flow direction of coolant is switched by controlling the opening and shutting of forward direction electromagnetic valves 25, 26 and inverse direction electromagnetic valves 27, 28. Electric power generation of the fuel cell 11 is started when the temperature at a coolant supply inlet Tin and the temperature at a coolant exhaust outlet Tout reach a second temperature T2 (for example, 0° C) or higher.

